



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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July 28, 2008

Mr. Donald Kinard
Deputy Chief
Regulatory Division
U.S. Army Corps of Engineers
Jacksonville District
4400 PGA Boulevard, Suite 500
Palm Beach Gardens, FL 33410

Attn: Ms. Tori White

Subject: USEPA's Review of the COE's DEIS "To Construct Stormwater Treatment Areas on Compartments B and C of the Everglades Agricultural Area, Florida"; Palm Beach and Hendry County, FL; CEQ# 20080222; ERP# COE-E39074-FL

Dear Mr. Kinard:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) has reviewed the U.S. Army Corps of Engineers' (COE) Draft Environmental Impact Statement (DEIS) for the subject project. We have previously reviewed numerous COE NEPA documents proposing the Comprehensive Everglades Restoration Plan (CERP) construction and operation of Stormwater Treatment Areas (STAs) and associated reservoirs. The current STA proposal is not one of the original CERP projects identified in the Restudy. However, it is a State of Florida "Acceler8" project designed to expedite water quality benefits under CERP and it is consistent with the requirements of the Everglades Forever Act (EFA).

Overview

USEPA fully supports the concept and implementation of STA expansion and additional STAs to improve Everglades water quality consistent with the EFA, and CERP. The present proposal would provide two additional STAs totaling 12,900 acres of effective treatment area as Compartments B and C in the Everglades Agricultural Area (EAA). The Compartment B STA (6,700 ac) would facilitate the phosphorus reduction functions of existing STA-2, which discharges into Water Conservation Area (WCA) 2A. Similarly, Compartment C STA (6,200 ac) would facilitate the existing phosphorus reduction functions of existing STA-5 and STA-6, which ultimately discharge into WCA 3A.

Based on the analyses of Alternatives B through D presented in the DEIS, the addition of Compartments B and C will result in additional phosphorus removal of water

delivered to the Everglades Protection Area (EPA). Table 4-5 indicates that the annual Total Phosphorus (TP) load into the EPA is predicted to vary from about 59 metric tons per year for Alternative B to 62 metric tons for Alternative D, as compared to 71 metric tons for Alternative A (No Action Alternative). The loads to the Arthur R. Marshall Loxahatchee National Wildlife Refuge, WCA 1 (Refuge) for Alternatives A to D are about 14 metric tons. In contrast, Alternative E has a much lower TP load into the Refuge of about 5 metric tons. We also note that Alternative D-1 emphasizes the maximizing of flows south to WCA 3A and the Everglades National Park (ENP). Alternative E would add approximately 10,137 acres of additional STA treatment in the S-5A Basin, which would improve the treatment of stormwater flowing to the Refuge.

Perspective

Even with all of the features associated with any of the Alternatives B-E, additional phosphorus removal will be necessary to meet the TP criterion in water delivered into the EPA. In 2005, Florida adopted and USEPA approved a 10 parts per billion (ppb) TP criterion (long-term geometric mean measured in the marsh) for the EPA. This criterion applies throughout all of the EPA, including impacted and unimpacted areas. The concentration of TP in the discharge from each STA will be determined by Water Quality Based Effluent Limits (WQBELs) for all basins that discharge into the EPA. Florida must establish these WQBELs by December 31, 2010.

In 2005, staff of the Florida Department of Environmental Protection calculated a draft WQBEL of approximately 16 ppb (annual maximum, flow-weighted geometric mean: GM) which would achieve the 10 ppb criterion in the receiving water applied at the point of the STA discharges (we are also aware that Dr. William Walker has concurrently developed a draft WQBEL, which is also about 16 ppb). According to the 2008 South Florida Environmental Report, Water Year 2007 discharges at each STA are as follows: 119 ppb for STA-1W; 71 ppb for STA-1E; 41 ppb for STA-2; 22 ppb for STA-3/4; 192 ppb for STA-5; and 45 ppb for STA-6.¹ Table 4-7 of the DEIS projects TP concentrations in inflow waters to the EPA. For Alternatives A to D, the total average discharge into the EPA varies from 27 ppb for Alternative B to 33 ppb for Alternative A. We note that all of these values are all higher than the 16 ppb maximum of the draft WQBEL.

Once the EIS is updated and the STAs are implemented, we believe that the function of the proposed additional STAs for Compartment B & C would be significant progress – albeit more progress is needed – toward improving the water quality of the Everglades as part of the EFA and CERP restoration process. In regard to the need for additional treatment beyond the proposed STAs, we are encouraged that the State of Florida may purchase up to 187,000 acres of agricultural lands within the EAA which could allow future construction of additional STAs (onsite or through land exchanges) to further improve Everglades water quality. We also wish to emphasize the need for continued implementation and improvement of nutrient source-reduction BMPs upstream

¹ USEPA recognizes that more recent data indicates STA performance has improved over what was reported in the 2008 report.

of the STAs as required by the EFA, such that STAs would function more effectively in reducing the nutrient-laden waters to desired water quality levels.

Impacts

* Wetlands – As with most section 404 projects, USEPA notes that the proposed Compartments B and C would impact (in this case, inundate) onsite wetlands. Under section 404 and the implementing regulations, projects should be designed to avoid wetlands if possible, minimize the impacts, and then mitigate for all remaining impacts. Most of the projected impacts for the proposed STAs will be to degraded agricultural wetlands (atypical wetlands), although there will also be impacts to shrub-scrub and cattail-dominated marsh wetlands (we understand from the COE that some scattered areas of sawgrass wetlands are also present in the proposed site for Compartment B). Based on Section 5.7, the south build-out portion of Compartment B contains 3,217 acres of cattail-dominated marsh with scattered willow and Brazilian pepper. The Compartment B north build-out has 4,047 acres of atypical wetlands (active/fallow farm fields). Compartment C contains 317 acres of shrub-scrub wetlands, 1,689 acres of mixed cattail marsh and 3,544 acres of atypical wetlands. Overall, the proposed construction and flooding of these STAs would impact a total of about 11,814 acres of jurisdictional wetlands and 1,695 acres of other waters of the US.

Consistent with the prior section 404 permits issued for the original STAs, USEPA agrees that the section 404 permit for these treatment systems will convert the entire footprint of the STA into non-jurisdictional waters of the US. Therefore, STA mitigation should account for both the structural footprint (levees, etc.) as well as the onsite wetlands that would be flooded or inundated. USEPA has reviewed the wetland assessment done by the applicant and agrees with the potential impacts that have been identified but has concerns with the details of the mitigation proposed to offset those impacts.

USEPA will also provide additional comments under separate cover pursuant to the section 404 (b)(1) Guidelines in its review of the pending COE's Public Notice for this project. USEPA would note that there are several alternatives to providing offsetting mitigation for this project. The non-STA benefits (*i.e.*, downstream restoration benefits in the Everglades) should be better documented in the next NEPA document. If it is determined that downstream benefits do not equal or exceed STA mitigation requirements for the entire STA footprints, additional offsetting mitigation is required and should be documented in draft or final form in the next NEPA document. The next NEPA document should provide additional specificity regarding mitigation (debits and credits) beyond information in DEIS Chapter 5 (also see enclosed *Detailed Comments*);

* Water Quality – USEPA is also concerned that the proposed Compartment B expansion includes a proposed extension of the South Florida Water Management District's WCA 2A Hydropattern Restoration works, located along the L-6 borrow levee, adjacent to WCA 2A, just to the northeast of the S-7 pump structure.² The existing condition is a

² It is unclear whether the Hydropattern Restoration moderating provision (variance policy) contained in the Phosphorus Rule will be applied in this context.

4,800-foot long degraded section of the East L-6 Levee, which allows STA-2 discharge water to directly enter impacted (cattail) marsh areas in WCA 2A. USEPA understands that the DEIS is proposing an approximate 10,400-foot long additional degradation of the East L-6 levee to the north. The resultant East L-6 Levee degradation would be approximately 15,000-feet long. Our concern is that such a levee degradation expansion to the north would allow STA-2 treated waters (average 41 ppb TP in Water Year 2007) to directly enter unimpacted sawgrass marsh in WCA 2A. However, the TP criterion that applies throughout the EPA is a long-term mean of 10 ppb and impacted WCA marsh is defined as having soils with greater than 500 mg/kg TP.³

USEPA recommends that the FEIS address this issue in terms of possible discharge alternatives or other measures for this portion of the project. USEPA is opposed to any East L-6 Levee degradation that would allow treated STA-2 discharge waters at elevated TP concentrations to directly enter unimpacted sawgrass marsh (soil TP below 500 mg/kg TP) in WCA 2A if excess phosphorus in the discharge would result in impacts. In addition, USEPA would be opposed to any East L-6 Levee degradation that would allow treated STA-2 discharge waters to enter an impacted area if the excess phosphorus in the discharge causes further expansion of the impacted area into unimpacted areas.

USEPA also notes that the NPDES permit for the original STA construction included certain special conditions regarding downstream monitoring of the STA discharges, including discharges associated with hydropattern restoration. This monitoring requirement was intended to ensure that additional water quality impacts did not occur as a result of the STA discharges or any hydropattern restoration feature. It is not clear how these conditions will be met for these hydropattern restoration features.

* Modeling – USEPA also finds that the DEIS contains some technical deficiencies. These include the hydrology/water quality modeling; the assumptions used in modeling Alternatives A, B, C, D and E; and the overall technical quality of the document. Overall, we suggest that an adaptive model be used that can be adjusted to dynamic conditions encountered.

For example, the modeling evaluations in the DEIS assume that the following features (which presently do not exist) are in place:

- * EAA A-1 reservoir (16,000 acres)
- * C-43 basin reservoir (11,000 acres)
- * C-44 reservoir assisted STA (3,400 acres with 6,300-acre STA)
- * West Palm Beach County in ground reservoir (870 acres)
- * Water Preserve Area reservoirs (5,100 acres).

³ USEPA notes that under the Phosphorus Rule, any individual station identified as impacted based on the soil levels that achieves a water column 5 year GM of 10 ppb and an annual GM of 15 ppb is considered unimpacted.

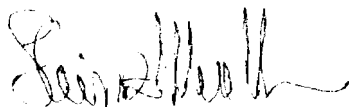
Since these reservoirs are inter-related to the need for and function of the proposed STAs on Compartments B & C, the FEIS should analyze the effects of this project based on existing features, adding the new features incrementally. It should also discuss the probability of reservoir implementation and operation by the 2010-2012 timeframe, and the cumulative effects on the proposed STAs project if these reservoirs are not completed within a reasonable timeframe. In addition, the DEIS modeling used STA phosphorus loading rates (PLR, grams of phosphorus per square meter of STA surface area per year) that are too high to achieve the 16 ppb at the STA outflow. Accordingly, the basis for Tables 4-1 through 4-7 appears to be incorrect and should be re-analyzed. Lake Okeechobee operations should also be modeled using the current Lake Okeechobee Regulation Schedule Study (LORSS) schedule instead of the Water Supply Environment (WSE) schedule. We are also concerned with the water quality evaluations in Sections 3.4.1 (*Surface Water Hydrology*), 3.4.3 (*Water Quality*), 4.2.1 (*Surface Water Hydrology*) and 4.2.3 (*Water Quality*). We request that these areas be improved in the next NEPA document using more realistic, updated assumptions.

USEPA DEIS Rating

USEPA is fully supportive of the construction of the proposed STAs. However, USEPA has concerns regarding the wetland impacts of the total STA footprints, the discharge of STA waters into unimpacted and certain impacted areas, and some of assumptions and technical analyses made for the project in this DEIS. We are also requesting some re-evaluation including remodeling; however, our request for such re-evaluation is not intended to substantively delay the much-needed implementation and operation of the proposed STAs. USEPA therefore rates this DEIS as an "EC-2" (Environmental Concerns, with additional information requested). We have provided additional technical comments in the enclosed *Detailed Comments*.

USEPA appreciates the opportunity to review the DEIS. Should you have questions regarding these comments, feel free to contact Chris Hoberg of my staff for NEPA issues (404-562-9619 or hoberg.chris@epa.gov) and Eric Hughes of our USEPA Water Management Division (located in the Jacksonville District office) for technical issues (904/232-2464 or hughes.eric@epa.gov).

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosure – *Detailed Comments*

cc: Joan Lawrence – DOI: Miami, FL
Paul Souza – USFWS: Vero Beach, FL

DETAILED COMMENTS

* Wetlands Mitigation - The next NEPA document should provide additional specificity on wetland mitigation. Although the DEIS Section 5 (*Mitigation*) outlines some mitigation options, more analysis using the Uniform Mitigation Assessment Method (UMAM) will be needed at the Section 404 permit stage to determine the availability of the COE's wetland mitigation credits. Availability of Acceler8 system-wide mitigation credits is likely to be limited as discussed in Section 5.7.4.1. In Section 5.7.4.2 (*Excess Everglades Construction Project Mitigation*), we recommend inclusion of a discussion of watershed scale benefits to help show the connection to the impact sites, which are in two counties. Also, a discussion of the potential hydrologic improvements to WCA 2A is needed as well as any anticipated downstream water quality improvements as potential full or partial fulfillment for STA mitigation requirements. We note that a previous STA permit identified hydropattern improvements as mitigation for indirect wetland impacts (i.e., flooding).

* Modeling – The modeling in the DEIS used STA phosphorus loading rates (PLR, grams of phosphorus per square meter of STA surface area per year) that are too high to achieve 16 ppb at the STA outflow (1.2 g/m²/yr and 2.0 g/m²/yr phosphorus loading rates were used in the DEIS modeling). It is known that there is a positive relationship between the PLR to an STA and the TP concentration in the STA outflow. The higher the PLR, the higher is the STA outflow TP concentration. This concept is the basis for the Technology-Based Effluent Limits (TBELs) in the STA permits. To date, the PLRs for the STAs have varied from about 1.0 to 5.0 (2008 South Florida Environmental Report, Table 5-39). The DEIS indicates that a PLR of 1.2 was used for modeling Alternative E (pg. 2-4). Based on existing information on STA performance to date, this PLR may be too high for the STAs to achieve the ultimate goal of the criterion at the STA outflow. TBEL documents were developed during 2007 for each of the six STAs. At a PLR of 1.2, the mean annual STA outflow TP would be expected to be about 25 ppb for STA-1W; 22 ppb for STA-1E; 25 ppb for STA-2; 20 ppb for STA-3/4; 60 ppb for STA-5 and 24 ppb for STA-6. At a PLR of 1.2, the upper 90% confidence interval (which is the required STA annual effluent concentration in the TBELs adopted in the STA permits) is 34 ppb for STA-1W; 28 ppb for STA-1E; 31 ppb for STA-2; 25 ppb for STA-3/4; 86 ppb for STA-5 and 39 ppb for STA-6. All of these concentrations exceed the draft QBEL of 16 ppb.

There is also a contradictory statement in Appendix H. Pages H-6 and H-10 state that an even higher PLR of 2.0 was assumed during the alternatives modeling for STA-1E and STA-1W. At this higher PLR, STA performance would be expected to be worse: mean annual STA outflow TP would be expected to be about 30 ppb for STA-1W; 28 ppb for STA-1E; 28 ppb for STA-2; and 70 ppb for STA-5. However, at a lower PLR of 2.0, the upper 90% confidence interval (which is the required STA annual effluent concentration in the TBELs adopted in the STA permits) is higher, i.e., 38 ppb for STA-1W; 34 ppb for STA-1E; 35 ppb for STA-2; and 97 ppb for STA-5. In any case, all of these concentrations still exceed the draft QBEL of an annual maximum of 16 ppb.

* Alternative D-1 – Like the other alternatives, Alternative D-1 should also be fully modeled for comparison.

* Section 3.4.3 – The Lake Okeechobee water quality description should be substantially improved. Water quality conditions in Lake Okeechobee for 2006-2007 should be fully described and the water quality ramifications of Lake Okeechobee water quality conditions to the downstream STAs and eventual flows to the WCAs and ENP need to be fully discussed. The poor existing water quality conditions in Lake Okeechobee are having a profound adverse effect on the ecological goals of CERP to increase flows to ENP, the State meeting its water quality commitments, and the operation on the Everglades construction project (EAA STAs). We note that this effect is not discussed in Section 3.4.3 of the DEIS, but should be in the next NEPA document.

* Editorial Comments

+ *Diagrams* - The quality of the diagrams and sufficiency of the supporting explanations on in Section 2.2 (*Comparison of Alternatives*) on pages 2-7 to 2-10 should be improved.

+ *Section Title* – The title of the section in the middle of page 2-26 should be *C-43 West Basin Reservoir* as opposed to *C-43 Basin Aquifer Storage and Recovery*.